Day 2: Structure and Function

Session #3: Using Characteristic Structures to ID Organisms

…connected to…

Day 3: Continuity of Life, Natural Selection

Session #5: How Structure Helps Organisms Survive and Reproduce

FOSS Diversity of Life Investigation #1 (What is Life?)

* Living vs. Non-living

FOSS Diversity of Life Investigation #5 (Seeds of Life)

* Seeds are dormant state
* Germination is onset of growth and differentiation
* Cotyledon is primary source of energy for germination
* Monocots vs. dicots

FOSS Diversity of Life Investigation #7 (Plant Reproduction)

* Investigate reproductive systems in flowers
* Understand origin of seeds
* Explore plant adaptations for seed dispersal
* Structure-Function relationship of flowers
* Explain how seed-dispersal mechanisms contribute to plant survival

Other Activities

* Seed germination in baggies (very popular exercise from year 2)
* Exploration of flower parts using QX5 (very popular with 3rd graders)

Outline of Activities:

Day One (Session #3)

1. Categorize objects and organisms into living and nonliving groups (FOSS #1)
2. Seed dissection (FOSS #5)
3. Explore seed and flower structure using QX5 microscopes

Day Two (Session #5)

1. Set-up seed germination experiment to investigate the effect of abiotic factors on germination
2. Make observations to develop a general model of how seeds disperse (FOSS #7)
3. Explain how seed-dispersal mechanisms contribute to a plant’s survival (FOSS #7)
4. Student synthesis—using posters, writings, and artwork to develop over-arching concepts

Future Date (~1 week later)

* Quick seed germination observation and sharing out of results

Rationale:

Seed and flower dissections will allow the teachers to see the structures that allow for reproduction of plants. I have previously done this activity with 3rd grade science classes, and it was very successful. The QX5 microscopes are perfect for this activity—pollen grains and ovules are easily visible, and can be photographed and labeled. To connect this to the seed germination experiment on the next day will allow teachers to connect structure and function. The germination experiment will allow teachers to explore their own questions regarding the correct environment needed for germination. I would like to see the activities that the FOSS kits have in regards to seed dispersal and plant survival. Finally, I would like the teachers to synthesize what they have learned through creative means.